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SURGEON TO THE PRIVATE HOSPITAL FOR SYPHILIS AND DISEASES OF THE
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PREFACE.

IN publishing this treatise on Gleet, my intention is to elucidate some essential points which are very often neglected, and to make its pathology more generally and more fully known. I not only state instances of my success, but also of my failure, indicating that form of Gleet which may be cured by medicine, and that which requires surgical treatment.

I purposely omitted to fill my pages with long accounts of cases, because the histories of cases are of late related so much in consonance with the writer's preconceived ideas on the subject, that the profession at large has begun to lose confidence in them.

I consider that accounts of cases are only valuable when they are publicly observed, as in hospitals, in the presence of witnesses. Besides, I did not wish to occupy my pamphlet, and weary the reader, with tiresome cases, as many writers in our day too frequently do, not having sufficient matter wherewith to fill the pages of their works.

Some important points I have repeated intentionally, because I consider them of such vital importance in the Diagnosis and Treatment of Gleet that I thought they could not be repeated too often, or too strongly impressed on the mind, and particularly on the young practitioner.

This treatise is the result of fifteen years' patient observation, and in leaving it to the profession, the Author will be happy if it should be the cause of dispelling some erroneous ideas on this disease.

59, Wimpole Street,
December 1, 1857.

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SYMPTOMS

AND

PATHOLOGICAL ANATOMY.

THERE exists a disease of the urethra extremely frequent, quite harmless in its appearance, generally neglected by the patient, and presenting warnings often not sufficiently appreciated by the practitioner.

I allude to gleet, or chronic clap, called by the French, *Goutte militaire;* by the Germans, *Nachtripper.*

To gleet very little attention has been devoted by practitioners, and even the great Hunter treats on this protean disease in only two or three pages in his remarkable work on venereal disease.

Gleet is always the consequence of a clap. I have never seen it idiopathically appear without clap, except in cases of disease of the prostate gland or bladder. I would not say that idiopathic gleet never exists, but I have never seen it.

Gleet always follows badly treated clap, and may sometimes be kept up by a constitutional taint. It is generally not infectious; and I have never observed it to be so. I have seen patients who had gleet for years without paying the least attention to it, who came to consult me for quite another derangement of the urinary organs, believing that their complaint was in no way connected with this small secretion. c̄ a gleet.

When such a patient, indulges in stimulating drinks or women, his gleet becomes gonorrhœa, and he thinks he has contracted a new clap, but in reality it is only the old gleet increased; and even Hunter, that great observer and philosopher, was mistaken when he stated that in some instances gonorrhœa appears in a few hours after an impure cöitus. I have never seen gonorrhœa come on so soon as Hunter mentions, (page 160, On Venereal Disease,*) except when the urethra was previously in a diseased state, and believe that in those cases of which Hunter writes, there existed a diseased state of the urethra, resulting from a former gonorrhœa.

Such cases in my early professional career, sometimes puzzled me; but, rendered cautious by experience, I now directly explore the urethra, and in all instances when clap appears so soon as in some hours or a day after cöitus, I invariably find signs of a previously diseased urethra. Patients affected as I have described, relate, upon inquiry, that since their attack of gonorrhœa they have felt uneasiness in the genital parts, shooting pains, and occasionally have seen a small discharge from the urethra.

---

* Edited by Palmer.

In married life, gleet frequently occasions unjust complaints. I have known men accuse their wives of having communicated infection to them; but, on inquiry, I have always found that in the course of their lives those husbands either had gonorrhœa several times, or were affected with clap of long standing, and that occasionally a slight discharge was seen, perhaps only a drop or two, for five or six years, in the morning, and to which no attention was paid.

Should a person so affected have cöitus with his wife, soon after partaking too freely of stimulants, his gleet may become clap, and thus what the wife (or mistress) is too often unjustly accused of causing is merely an aggravation of his old complaint.

Gleet generally runs into gonorrhœa after excess either *in baccho* or *venere*, particularly if the woman with whom the individual cohabits be affected with *fluor albus* or whites, or sometimes if she has but lately menstruated.

When we consult works treating on gleet, we find an immense arsenal of remedies used for it. We may be always sure that when a great number of remedies is recommended for a disease, it is generally of very difficult treatment, and its pathological anatomy imperfectly known.

Modern science has to a great extent abolished empiricism, and pathological anatomy has dispelled many erroneous opinions of diseases. That a greater amount of scientific knowledge of gleet and its means of cure does not exist, may be ascribed to the little investigation which has been bestowed upon it even by the authors of medical treatises, wherein the subject of gleet is generally very superficially treated.

Nevertheless gleet is a very serious complaint, because it is sometimes a sign of stricture, or at least one of its forerunners.

Some patients have not the least anxiety about its persistence, but the greater number are uneasy about it; and in some a kind of hypochondriasis and nervousness are induced, the nervous system becoming affected by continued mental disquietude.

Gleet, generally speaking, is a local disease; but I have seen in scrofulous and strumous individuals, in constitutions highly lymphatic, this disease resist all local treatment, until iodine, iron, and other remedies, having a constitutional mode of action, have been adopted.

Considered as a local disease, only local treatment is of use; but simultaneously and in addition thereto, when constitutional disorder is present, recourse must be had to some constitutional remedies, such as I have above mentioned, the principle of treatment being the same as in scrofulous ophthalmia.

Some authors have stated their belief that the fluid secreted in gleet is of a purulent nature; but Morgagni (Epist. xliv.) and J. Hunter (vol. ii.) have demonstrated that such cases are extremely rare; and after careful and repeated examination by the microscope, I have very seldom found pus globules. It is, moreover, very difficult to ascertain whether this secretion emanates from before or behind the strictured portion of the urethra when a stricture exists. I am of opinion it is secreted from both sides; but Sir Benjamin Brodie (page 11, Lectures on the Diseases of the Urinary Organs,) believes that in recent gleet, or rather in the early stage of stricture, the fluid is secreted by the anterior part of the urethra.

In gleet there is generally only one spot affected by chronic inflammation, and very rarely several. The spots are chiefly to be found, according to my observations, either behind the *fossa navicularis,* or just at the beginning of the bulbous portion. The membranous portion is less frequently affected; but in clap, when the prostate gland is at the same time inflamed or congested, I have found that if gleet remains after such a clap, it is very deeply seated, and the membranous portion is then the affected part. Now, suppose a clap becomes gleet, instead of being an acute inflammation it becomes chronic, and the following phenomena will take place. Every one knows that in inflammation there is congestion, and the result of inflammatory congestion is either, 1st, resolution, as we see in the course of a mild gonorrhœa; 2nd, exudation; 3rd, suppuration; 4th, ulceration; 5th, induration, with hypertrophy or atrophy, of the affected parts; 6th, gangrene.

In inflammation of the urethra, we generally see resolution; the next termination in order of frequency, is induration with atrophy; and the third is induration with hypertrophy.

The induration with atrophy forms the largest part of organic strictures to which, at a future time, I shall give my due attention and explanation. The other results of inflammation are extremely rare in the urethra, and the termination in gangrena I have never witnessed. When the resolution after acute inflammation is not complete, the mucous membrane, or rather the submucous tissue, may remain a long time in a state of chronic inflammation; the vessels of the part affected continue injected, as I have convinced myself by the uretroscope. The use of the uretroscope is attended with some difficulty, and the first time of applying it, I was compelled to take great trouble before I could derive any benefit from its use. Mr. Avery's uretroscope is quite useless for deep inspection, at least I found it so. Mr. Desormeaux's is a better instrument, because the light is reflected by an oblique mirror, and does not come in the way of the observer. With the help of this instrument, after long perseverance and much trouble, I could always observe the affected parts more red, injected, and even sometimes swollen; but where swelling exists, it is made very obvious when we use the ball-staff, or urethra probe, of which instrument I shall speak presently.

Now, two things may happen during the chronic inflammation: either the vessels remain simply injected, and in such a case, rational treatment of the gleet will be successful; or a blastema is thrown out, the affected part becames either hypertrophied or atrophied, and in the last instance a new tissue is formed, resembling the fibrous; this last occurrence forms the greater part of organic strictures, and in these cases the plan of treatment by mechanical means, generally adopted, fails. Delpech called our attention to a tissue of new formation, which he designated as a *tissue inondulaire*, and Mons. Jules Guérin has paid especial attention to that tissue as the result of inflammation, to which he gives the denomination of *tissue retractile*. Hunter also mentions this contraction; and Mr. Paget has very admirably described this tissue, page 230, in his work on Pathological Anatomy. Practically, we must admit three kinds of inflammatory retraction. The first I propose to call passive, as we see it take place in limbs affected by inflammation, when the soft parts get shorter by position; such occurrence we also see in fractures, and painful rheumatism or long-standing ulcers. The second we see in the neighbourhood of long-standing suppuration. The third we see in inflammation, followed by exudation or granular suppuration, as we observe after severe burns, and a new tissue is formed, which retracts, gets atrophied and shortened; this last occurrence we see take place in the largest number of confirmed strictures. But any gleet of long standing produces perturbations and strictures, and this quite mechanically. I have shown that there is a part of the urethra swollen, and this swelling is sometimes very obvious even to the external examination of the urethra by the finger, particularly when a large metallic bougie is introduced. Where such a swelling exists, there must consequently be diminished calibre of the urethra at the swollen spot, and every time the water passes against it, the swollen part must be irritated, because the column of water is larger, coming from a larger tube, and arriving at the affected part must naturally press and irritate it. Where, therefore, in gleet such a swelling exists, there is a continual cause keeping up the local congestion and irritation. The ball-staff is another mode of ascertaining this swelling. If this swelling is very slight, the use of the ball-staff (*bougie à boule*) is the more indicated, becaus the ordinary straight bougie is quite inadequate to discover it. Of the truth of the last assertion I have very frequently convinced myself. The *bougie à boule* was used by Sir Charles Bell, and a drawing is given of it in his work on the urethra. But, strange to say, this kind of exploration as practised by that acute surgeon is in our days very seldom used. Monsieur Leroy d'Etiolles took advantage of Sir Charles Bell's discovery, and substituted, for the metallic ball-staff of Bell, an elastic one; and certainly, I must confess, this kind of bougie is of great assistance in ascertaining the pathological state of the urethra. The ordinary straight elastic bougie is quite useless, and for more than ten years I have used the elastic *bougie à boule* of Mr. Leroy d'Etiolles. Not only does it give us a better insight with respect to the seat of the mischief, the numbers and length of strictures; but slight strictures or slight swellings of the urethra are alone to be discovered by its use.

I shall describe gleet as existing under three different conditions. In the first, there exists only chronic inflammation of one or several spots, with weakness of the affected parts; in the second, is a pathological change of one or several spots of the urethra, with swelling and redness, the affected parts are more or less swollen, retracted, and sometimes deviated; in the third condition of gleet, there exists an established structural change of the affected parts. There we see not only congestion and redness, but the submucous tissue has quite lost its normal elasticity. Gleet, in the second condition, I always look upon as a kind of an imperfectly formed stricture, but treated in time a cure will be effected.

The most apparent sign to the patient, is a drop of purulent mucous every morning, or several times in the day. This secretion is sometimes so small that the patient is scarcely able to discover it, but the state of his water attracts his attention, in consequence of observing small filaments in it every day; these filaments are very often the source of annoyance to the patient. There are some people who read with avidity every medical pamphlet, or book, written on genital pathology, and principally the books of the Quacks written on spermatorrhœa, are alarming in such a degree to them, that very often I have been consulted for spermatorrhœa, where I found, by a close examination, either a confirmed organic stricture, or a gleet with very little secretion ; and this secretion being sometimes washed away with the water, the filaments above alluded to, swimming in it, were the only indication. The microscope, in such cases, is of great value. The aspect of those filaments with the naked eye is quite different from that of semen in the urine, the former being lengthened and swimming on the surface, the latter looking milky.

In some cases, the patient has no other inconvenience than the secretion of one or several drops of muco-purulent matter during the day ; and if the patient is of a careless nature, he goes on for years, till more serious symptoms begin to alarm him ; but in other cases, the patient has always a feeling of uneasiness in the urethra, sometimes a kind of itching in the length or the orifice of the urethra, with or without making water. I have observed the latter signs more in individuals of a nervous constitution, and these patients generally are more uneasy, and try sooner to get advice either from the Quack or the practitioner. Lancinating pain is very remarkable in the first period of the affection. Sometimes the orifice becomes more red, principally after excess ; but more frequent than lancinating pain, is a kind of slight itching at the orifice of the glans in making water, but sometimes without. A pricking pain is frequently so painful in the morning, that several patients complain very much of it. At first I could not explain how it was that, in some instances, this pain has been more severe than in others, but at last I found that in cases, where the secretion was very small, it gets dry in contact with the air, and closes the orifice, hence the sharp pain when the stream of the water pushes against the closed orifice. This can be imitated artificially, in closing the orifice with the finger. I came to this conclusion after long observation, and I have convinced myself of it principally in two cases, in which the secretion was remarkably small; I therefore desired to see the patients in the morning before making water, and in both instances I always found the orifice closed by the dry secretion. No pain existed when the patients opened the orifice before making water.

Patients of nervous constitution, as I previously stated, are very uneasy about their gleet, and even when cured, there remains a kind of gonorrhœa mania (if I may use the expression). They retire from observation, and squeeze the glans frequently; sometimes they persist in believing they have gleet again; yet there is neither secretion, nor can the probe-staff detect anything wrong in the urethra.

Such persons have the most absurd ideas about their state, cured or not cured, and the medical man has to use all his powers of eloquence and persuasion to calm such individuals.

In cases of gleet, where the organic pathological change is great, the function of the reproductive organs suffers very much; neither have such individuals strong erections, or when they have they are of a short duration; yet even away from women their erections are frequent. The reason of this might be their too much irritated urethra; they have rather erections of irritation, than of true want, and such patients in contact with women discharge quickly, and sometimes not without pain. It often happens that blood is mixed with the semen, and this occurrence we observe more frequently in recent cases of gleet, soon after the acute gonorrhœa becomes gleet, where there probably exists at some part a marked degree of swelling and injection of bloodvessels of the mucous membrane. In very old gleet, I have not seen this take place.

In some books we find a description of what is called *dry clap*, or what the French call *une chaude pisse sèche*, and as they admit a dry clap they admit also a dry gleet, or gleet without secretion. I have seen several patients who pretended to have a dry gleet, as their medical men called it; but in such cases I did not find any marked signs of gleet, and I believe their origin to be of a nervous nature, and frequently when the patient is asked about symptoms of a nervous nature, such as spasms of the *membrum virile*, strangury, or want to make water, &c., principally when mentally affected, he tells us such is the case. When the inspection—the manual or instrumental exploration—did not give me any sign of local disease, I treated it as a nervous complaint, and of all remedies, electricity and cold water are the most fit, principally the first, to abate those nervous symptoms. Cold water is not by all patients equally well borne, and in some cases I have been obliged to leave it off.

On this subject I must remark, that there is no organ in the human frame where electricity is more effectual than in the genital organs, and no organ resembles more in its functions electricity than the organs of generation. I have used galvanism and electricity with the best results in spermatorrhœa, impotence, in some cases of nocturnal pollutions, and other nervous complaints, where the effect was not to be mistaken. In one case, a gentleman consulted me for *ischuria*, believing that he had a stricture. I explored the canal, but could not find anything resembling a stricture; the prostate gland was quite healthy. I therefore believed his complaint to be nervous, a kind of *atonia* of the expulsing powers of the urinary organs; I used electricity, and he did well. I was at last so convinced of the essential effect of electricity in the treatment of nervous complaints in the genital parts, that I had several instruments constructed, through the ingenuity of Messrs. Blaze and Wickers, of St. James's Street, and I use these contrivances to carry galvano-electricity to any part of the external or internal organs of generation.

In some rare cases of gleet which have come under my notice, it was accompanied by spermatorrhœa. Such patients are particularly hypochondriacal. They give a very rambling description of their complaint, accusing the little secretion of all the evils and nervous symptoms they suffer. In their examination, we must pay great attention, and after a careful investigation we shall arrive at the conclusion that there must be something else, because the little secretion could not produce such a great disturbance. As I previously stated, in many persons the subject of their gleet becomes a very troublesome occupation of their mind, and from the moment they retire from business they are studying it, pressing the *glans penis*, and the little secretion they occasionally observe makes them lose their reason and reflection; they are extremely uneasy and troubled; they have the most eccentric ideas about their complaint. But in cases of gleet, combined with spermatorrhœa, we find the whole nervous system disturbed, and real derangement in the functions of different other organs, as long standing and weakening spermatorrhœa produces.*

But by carefully put questions, and subsequent observation, we are soon able to discover that spermatorrhœa exists in conjunction with gleet.

In acute clap we see how easily inflammation attacks and extends through the sperm-secreting parts, and not seldom we see clap followed by orchitis. We can therefore easily account for the fact, that in gleet, the chronic form of clap, the sperm-secreting organs are affected by inflammation, and as the result of the irritated state of the testicles, and the other parts in intimate connection with them, spermatorrhœa takes place.

In very old confirmed strictures, I have found no secretion, at least it seemed so to me, and I am at a loss how to account for it; but if we submit the water to a close examination by the microscope, epithelial cells or mucous globules will generally be found in the urine. Such are, perhaps, the cases which are recorded by the French as *chaude-pisse chronique sèche*, but in fact it is nothing else than a confirmed stricture.

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* I must caution the medical man to be very sceptical about spermatorrhœa, a disease extremely abused by the Quack. True spermatorrhœa is rare, a very troublesome complaint, and sometimes a great annoyance to the practitioner. But there exists a kind of spermatorrhœa (if it can be called so) quite harmless, and extremely frequent. I would call it *spermatorrhœa abstinentiæ*. This slight complaint is so alarming to the patient, that he seeks advice as soon as possible, and is generally very easily cured by *cöitus*.

One of the most troublesome symptoms to the patient is a feeling of pricking and itching in the urethra, or at the end of the glans, which is sometimes accompanied by a feeling of heat, not only in the corpus spongiosum, but also in the deeper parts of the urethra. In individuals affected with piles, the anus is in a state of irritation too, and in two cases I have seen this in such a high degree, that both patients went several times a day to the watercloset without being able to have any defecation.

In regard to the social state of life, gleet is a very troublesome complaint, either for the single man or for the married. Men affected therewith get clap sometimes by seeing the healthiest woman. Often have I been obliged to pass a poor girl under the speculum who submitted to it with reluctance, rather than be accused of having a bad disease. And even in married life, I have seen the wife indignantly refuting the accusation of being ill, and asking with vehemence to be submitted to local examination. In such instances, the disease destroys domestic happiness, and in this point of view its radical cure is very much to be desired. One of the most distressing cases of this kind, I met in a recently married couple after the first night of the marriage: as experience had already made me very circumspect, I examined rather strictly the husband, without allowing his certainly innocent wife to be disturbed. I found that he had suffered during the last eighteen months from a very slight gleet, to which he did not pay attention; his ordinary medical adviser telling him it was of no consequence. After a treatment of two months he was cured, and has now remained well for three years. This disposition of gleet to become clap, we see more especially when the affected individual cohabits with women affected by the whites (*flueurs blanches*). Another dangerous epoch for them is, if they see women a day or two before or after they menstruate.

The terminations of inflammation of the urethra are the same as in inflammation of other tissues. In inflammation of other parts of the human frame, all pathologists agree, and admit there are different results sometimes following inflammation: resolution, atrophy, hypertrophy, suppuration, and gangrena, are admitted; but in inflammation of the urethra, a synthetic arrangement of those pathological states has been quite overlooked. Instead of putting logically and scientifically in gleet, the different signs together, either given by inspection, exploration, or reasonable induction, only an empirical way has been followed. The one advocates empirical injections, the other uses different kinds of resinous drugs, and when they succeed in one case, they propose the remedy as efficacious for any case of gleet. The practitioner has been only occupied with the suppression of the secretion, without asking what is the origin, what is the reason of this secretion.

The inflamed mucous membrane of the urethra does not differ from inflammation of other inflamed parts. When the conjunctiva of the eye is inflamed, an organ completely obvious to direct inspection, we see the inflammation is either resolved, or gets chronic, principally in certain cachectic constitutions. Once chronic, we see vascular development, as *pannus*, ulceration, exudation, principally when the cornea is affected, hypertrophy in some instances, with granular development (*bourgeons charnues*), and when the subjacent tissue suffers, we see ectropium and entropium, or retraction in its different forms. All these enumerated pathological states can follow the inflammation of the urethra. The same phenomena would certainly be observed in the urethra, if the urethra were equally obvious to the eye. When we admit these pathological phenomena in other inflamed parts, why not reasonably admit them also, as results of chronic inflammation of the urethra? But I go even farther, and I am of opinion the same laws must be admitted for the urethra, and a practice based on those laws is a rational one, and will be successful.

Gleet is produced principally by three morbid states of the urethra: first, chronic inflammation with development and atony of the vascular elements of the affected parts, or *deviation* and *retraction* take place without the tissue composing the urethra being changed. The *third result of inflammation* is a very serious one; an organic change takes place in the tissue composing the parts of the urethra, principally in the *corpus spongiosum* (stricture, atrophy, hypertrophy).

Amongst the third class, we can place gleet produced or kept up by those tumours which are principally felt in the corpus spongiosum, when a large metallic bougie is introduced. In four cases I found those tumours 2 to 4 inches in the urethra, and in one case very near the frænum. I had no occasion to make a post mortem, to assure me of the exact nature of those tumours. Sir Benjamin Brodie (p. 67, on strictures) believes they are indurated follicles. The treatment of them is very troublesome, and I shall speak again of them in the chapter on treatment.

Any one conversant with the pathology of orthopœdic surgery knows, and experience shows it us daily, that parts affected by inflammation, or sometimes the neighbouring parts, get contracted, shortened, deviated. Monsieur Jules Guérin has, for about twenty years, paid special attention to these pathological changes of tissues, in producing deformities; and the use of the microscope has sanctioned the conclusions he has drawn from it. But I was principally struck with the truth of the theory of Monsieur Auguste Mercier, asserting that strictures, the third condition in producing gleet, are nothing else than the atrophied state of the tissue composing the urethra. I think Mr. Mercier is right in many cases, but he has taken the question only from one point of view. Strictures are produced by some other pathological changes, besides atrophy; but of this I shall speak when I publish my memoir on strictures. In paying great attention, during the last ten years, to the pathological anatomy of strictures, I have come to the conclusion that atrophy, as a cause of producing strictures, forms the largest part, and principally such strictures where mechanical treatment is of no use, or only palliative.

The *corpus spongiosum* surrounding the urethra, is nothing else than a net of veins and arteries, principally the first, and when inflammation takes place in that tissue, occlusion of its vessels is not unfrequently the result; the part is less nourished, the vessels forming strings, as we see in an occluded vein, becomes atrophied, and has the aspect of fibrous tissue. The similarity of the spongy tissue to veins, is principally striking in the pathological physiology. We know that wounds of veins, or parts rich in veins, are eminently disposed to purulent infection, and so we find that purulent infection in urethral wounds is one of the most dangerous complications.

Those cases of gleet produced by *organic* change of the tissues, are very difficult of treatment; but their exact diagnosis is sometimes very difficult for the practitioner. There remains for several months a chronic inflammation, with a small discharge; the probe-staff shows to the explorator some obstacle at one or several points of the urethra; there may be already *organic changes* of the tissue; there may be simple *congestion*, and local *swelling*; there may be *contraction* and *deviation*. All those different states are more or less discovered by the ball-staff, but not always distinguished by it.

In one case I have observed that a slight erosion of the mucous membrane has kept up the discharge. I have seen this erosion very distinctly, but as I observed it only once, I do not consider myself justified in admitting erosion as a frequent cause of gleet. Yet old Deacon speaks of them, page 44. ("A Compendious Treatise on the Venereal Disease, Gleet, &c.") The same author says, "Obstinate gleets sometimes arise from ulcers being nearly in opposition to each other in the urethra, which have inoculated and produced bands crossing one to the other, so as to obstruct the passage of the urine." How Deacon came to this conclusion I am quite at a loss to understand, because he does not seem to have used the uretroscope, and to make post mortem is not so easy, because people do not die of gleet; besides necroscopy was not very easy in his time.

In all cases where the ballstaff discovers an anomalous state of the lumen of the urethra, perturbation of miction must follow sooner or later. The ensuing perturbation is based quite on physical laws. When existing only in a slight degree, it is even not easily discovered by the patient. Almost all my patients treated by the bougie, assure me that after the use of these instruments for some days, they feel much relieved in making water, yet the same patients assured me some days previously that they had not the least trouble or disagreeable feeling in making water. But it is very easily understood why such perturbation must take place, when there is in many cases one spot of the urethra either retracted, deviated, or swollen, which latter condition I would call only temporary strictures, and of this we shall speak more in the treatment. The urine, coming from the bladder by its contraction, meets an obstacle; the stream, finding at the pathological spot neither the same capacity nor the same elasticity, must consequently inflame and irritate each time in passing this spot. To have a precise idea on this subject, we have only to diminish the calibre of the healthy urethra a little, and we feel directly a sensible pain at its diminished lumen. I believe this to be one of the most frequent causes of keeping up gleet, and the chronic irritation is then prolonged quite mechanically. Several times when I have acquainted the patient of the state of his urethra, the answer has been that other medical men did not find any abnormal change at all, and, moreover, the patient himself never finds the least obstacle in voiding his water; he admits there is some irritation in the genital organs, he is obliged to make water more frequently, but no obstacle is felt; still there is an obstacle in such cases, only the wrong means of exploration have been used.

Formerly I quite despaired of curing patients affected with gleet; but then again I took courage, seeing that some can be cured. In our old books written on the subject, it is recommended to use the bougie with the intention of bringing on a new inflammation, and the same recommendation we see in modern works. After having observed many cases in which this method of treatment had been adopted, I began to pay great attention to it.

I was satisfied with the results of this method in some instances, but the success was not always the same; in the smaller number the method failed, and this failure was the incident which urged me on to make further inquiries, and to give the subject my whole attention. I came consequently to the conclusion, that the disease exists under several different conditions.

Gleet produced by a slight shortening or contraction of the mucous membrane of the urethra is very difficult to recognise; and in cases where the patients or even their medical adviser assured me there existed no sensible change, I have frequently found an error, and this error has always been the result of a superficial exploration. The ordinary straight bougie will never be able in slight cases to discover any abnormity, and it is quite useless for a minute exploration. With the ordinary catgut bougie, or the silver catheter, no exact exploration is possible, except when the mischief is far advanced.

The form of the stream of the water does, sometimes, give an indication of the existing abnormity of the urethra. When the seat of the gleet is very deep, the stream seems twisted, if in the spongy part it is rather flat; but these symptoms are only very obvious when it exists in conjunction with far advanced strictures, and I do not think it possible, by the simple inspection of the stream of the water, to diagnose the pathological or organic changes of the urethra except in severe forms. There exists a symptom which very often gives the first alarm to the patient; this is the letting fall some drops of urine in his trousers after having finished making water, and several of my patients have come to me for advice, not to be cured of the little discharge about which they did not care, but they thought this dribbling of urine after having made water must be the sign of something wrong. I do not fail to ask patients particularly about this symptom. Where it exists, there I invariably have found either a distinctly pronounced swelling or a far advanced organic change (confirmed stricture).

In simple gleet, when there is no perceptible pathological or organic change of the urethra, this dribbling of water will never be present; but in the retracted or deviated urethra, we may be quite sure this symptom will be constant, even if the mischief is of a very slight character.

Amongst the circumstances which render the diagnosis of the diseased urethra difficult, is one which is commonly overlooked, and this is the following case. A patient consults the practitioner for gleet, relates all his feelings and symptoms, and the medical man, suspecting something wrong, finds it necessary to explore the urethra. A straight cat-gut bougie or silver catheter is introduced into the urethra, and passes easily and normally; the surgeon then declares his patient's urethra free from any kind of obstruction or palpable change. Now, this error is very easily committed, when we reflect, that the orifice is generally the most contracted part of the urethra in its healthy condition, and the straight bougie, arriving at the slightly contracted spot, passes over it without giving any sign to the exploring hand of the surgeon, because the orifice, generally speaking, is about 5 to 6 millimetres in diameter, whilst the diameter of the other parts of the canal vary from 7 to 8 millimetres in some places. Now, suppose some spots, measuring 7 to 8 millimetres, are contracted from 2 to 3 millimitres, it is quite impossible to discover those diseased spots by a bougie suiting the orifice of the urethra. I think the last argument is so convincing, that we must admit that the common straight bougie cannot be used for discovering slight changes in the urethra, and so I have repeatedly found it.

It is generally believed that slight folds or projections in the urethra have their seat only in the mucous membrane. These slight folds are called by the French *valvules.* I cannot admit that these folds have always their seat only in the mucous membrane, and so far as I have been able to make post mortem examinations, I have found, generally, even in those slight cases, the sub-mucous tissue more or less contracted. I have seen these folds often by the uretroscope in the living, or it leaves an *empreint* on the wax bougie, and I possess a preparation from a case in which I always saw, during life, a kind of fold, but when the patient died of another complaint, and I had occasion to make the post mortem examination, I perceived my error. I found that this fold, which I had perceived through the uretroscope, believing it to be the mucous lining which was primarily affected, is caused by a contracted portion of the spongy tissue of a fibrous nature, as I ascertained by the microscope. In gleet, where these contractions or folds are very slight, the cylindrical bougie glides very easily over them, and they are not readily discovered. In many instances, I have convinced myself of the last statement, and therefore many errors of diagnosis are committed. These slight contractions are not even to be discovered by the *bougie à boule* if we do not pay great attention, and generally they cannot be felt in *going into* the urethra with the instrument, but only in *withdrawing it.* In the exploration of such doubtful cases, we must choose an instrument which suits best the size of the urethra; if this precaution be omitted, the result of the exploration will not be conclusive.

When the practitioner finds it necessary to make an exploration, the best and surest mode is to begin with an elastic ballstaff of not a large size; when a small one passes easily, he must go to a larger, till he has satisfied himself about the state of the urethra.

There exists an erroneous opinion concerning the feeling in the urethra, caused by the introduction of the bougie, and many false conclusions have been drawn from it. Some assume, that when there exists a pain at any point in passing the instrument, there must be inflammation or some pathological state at this spot, and Mr. Marchal de Calvi proposed lately, in clap, to cauterise directly (a very dangerous proceeding in my opinion) such spots, where pain exists in passing the bougie. I must cantion the tyro first, that there is a place, just where the urethra pierces, or rather is suspended in the triangular ligament, called by the French *ligament de carcassone*, in which the bougie in passing generally causes some pain, even in the healthy urethra, and when the operator may be the most expert surgeon. We are the more apt to fall into this error, because it is this spot which plays a great role in the pathology of the urethra.

I have satisfied myself in several instances, and I took great trouble in the use of the urethroscope, to come to the conclusion, that there are points in the urethra really diseased, which have been passed without pain by the bougie; others, where the passage produced pain, not the least pathological state existed. It is certainly true, there exists a sensibility at the affected spot in the majority of cases, but in some this sensibility is quite absent.

In exploring the urethra, we must be *slow and very careful.* Slow and careful should always be borne in mind in exploring or operating on the urinary organs, where the touch is very often the only means of judgment.

The ballstaff should be passed slowly towards the bladder. On arriving there, the practitioner must be cautious not to mistake the physiological obstacle of the neck of the bladder for a pathological one. It is well known, that the length of the urethra is different in different individuals, and we see the writers on this subject are not at all in accordance. My own experience has shown me that there exists a great difference in the length of the human male urethra. In short urethras, a young practitioner, or one not used to the *bougie à boule,* might take the resistance of the *sphincter* *vesicæ* as a swelling or retraction. In doubtful cases, where he is not quite satisfied, the best means to convince himself, is the measuring of the urethra by the ordinary catgut bougie, or silver catheter with eyes, after the same principle as in cauterising the *prostata.* When the surgeon compares the length of the catheter or catgut bougie with eyes with the length of the *bougie à boule,* he will soon be convinced that the resistance was a physiological one.

The ballstaff, when in the bladder, should remain there some minutes, to give time to the affected spots (if they exist) to resume their previous form. After waiting a few minutes, the *bougie à boule* should be withdrawn with great care and *attention.* I say attention, because slight pathological changes can only be discovered in withdrawing the bougie.

There are two places in the urethra which must be passed with particular slowness and care; one spot is near the bulb, and the other a little further in the muscular portion, in which latter part a spasmodic contraction takes place as the instrument is being passed into the urethra. In both cases, only long experience in sounding either healthy or diseased urethras, is the only means of avoiding errors. I would advise every medical student to try catheterism very often, not only in the healthy urethra, but in the diseased. I know all the difficulties of this plan, but the exact diagnosis of diseases of the urinary organs is of such vital interest for the community at large, that means should be found in the one or the other way to attain this object. The accoucheur cannot very often show to his pupils some very important operations, as the version, &c., but he has his mechanical imitation of the natural parts, and under his eye the pupil executes the operation. Would it not be advisable to have the same principle laid down for the operations of the urinary organs, which could be made of materials resembling the natural structure of these organs. Sounding, stone crashing, and several other important operations could be executed under the eye of the teacher, and certainly the pupil would soon understand the healthy and the diseased urethra. The physician demonstrates to his pupils first the healthy sounds in the chest, and afterwards he demonstrates the abnormal. I do not see why we should not follow the same principle in the pathology of the urinary organs. If this practice were admitted, we should not see so many errors committed in this branch of surgery.

There exists a general dislike in patients to be sounded, and it is with great reluctance they submit to this operation. Still, without an exact exploration, we remain in the dark about the diagnosis of the complaint. Some patients have been roughly handled, and they object directly when an exploration is proposed. The organs of regeneration are by their physiological structure of such sensibility, that sometimes the most trivial operation brings on fainting. I have seen patients faint in cauterising only slightly a chancre of the penis. It is therefore not astonishing, that some patients faint during the operation of introducing a bougie, an accident which might for a moment alarm the young practitioner, but is without any ill consequence. In such an occurrence some rules are to be observed, and the lying position is to be preferred. If, during the exploration, fainting comes on, the explorator is to be withdrawn, the patient should be placed in a current of air, cold water, and inhalation of ammonia be resorted to, and with the recumbent position he will soon be restored. I do not then make a second attempt, because we may be sure a second fit will come on, and we must leave the exploration for another time.

As I previously remarked, there are principally two spots which are to be carefully explored; they are near the bulbous and the membranous portion, not only in going in, but also in withdrawing the explorator. In some cases, where the mucous fold of the fossa navicularis is strongly developed, a surgeon not very experienced in sounding may be led into the error that there exists an obstacle, but this place is very obvious to the uretroscope; and not only by this means error will be avoided, but also by a little exercise of sounding healthy and diseased urethras. But the *apparent* obstacle is, without doubt, generally met with in the membranous portion. If we use force in exploring the urethra, even in a healthy one there will be more resistance, and sometimes even bleeding. As soon as the surgeon feels this resistance, he must wait a moment till the spasm abates, and when he expects or suspects at this spot to meet some abnormal state he must examine it carefully. It is the muscular or membranous portion, which can be pathologically deformed, and it is at this spot where *deviation* is most frequent. To *distinguish* this deviation, I have recourse to two kinds of exploration, the wax bougie and the metallic sound. The *bougie à boule* does certainly indicate in *deviation*, that there exists in traversing the membranous portion something abnormal; but as the *bougie à boule* is very elastic, it generally follows the curve of the deviation after a little resistance; for this reason it is inadequate to give us an exact idea of the complaint. I came to this conclusion by practical observation, and the practical conclusion I have drawn from it was to me extremely advantageous and successful in the treatment of gleet. In some cases I did not find any sensible pathological changes by the *bougie à boule;* I therefore began to look rather on the gleet as a local *atonia* of the urethra, and treated the disease as a consequence of it; but this method did not succeed. At last I used the ordinary metallic bougie, because in modern and old works on surgery it is very often recommended to produce a new inflammation, and they pretend this new inflammation cures the old one. This may be true in some instances; but in the course of my practice it struck me, that every time before the metallic bougie reached the membranous portion, the flat handle of the instrument became oblique, and I felt that there existed an obstacle, and in order to overcome it I was obliged to turn the point of the bougie either to the right or left side, to be able to pass the membranous portion. Having made this observation often enough to arrest my attention, I introduced wax bougies in these cases. After leaving them some time, to take the form of the urethra, I never could distinguish any tightening round the bougie, but they were crooked and deformed at the spot corresponding with the membranous portion. I must observe here, that in such an exploration the wax bougie must be taken out of the urethra with great care and slowness; without this precaution, we may allow the bougie to lose the acquired form in the urethra.

The elastic *explorator à boule* has an immense advantage over the metallic instrument, because it cannot do any mischief; being quite elastic, it is not probable that any laceration, contusion, or false *route* can be produced. In exploring with the elastic instrument, the surgeon must not be too hasty; he must, even with this harmless instrument, travel slowly, carefully appreciating very minutely the different spots of the urethra, paying special attention to the above indicated places. This rule must not only be observed in introducing the explorator, but also in bringing it back, because slight cases of contraction and swelling are only perceived in withdrawing the instrument.

The reason of my last remark is the following: the point of the head of the explorator is made like the common bougie, but the back of the ball of the explorator is very abruptly rounded. In drawing it back, there is no occasion for a gradual dilatation, the full size of the ball is presented to the *contraction*, and the pathologically altered spot is felt and transmitted to the exploring hand. Before drawing back the instrument, it is necessary to leave it from five to ten minutes in the bladder, to give time to the altered spots, which were gradually dilated in going in and not perceived, to take their previous size. At each spot which seems suspicious, we must pause and carefully observe its pathological change. In severe cases the diagnosis will be easy even to an inexperienced hand, but for slight ones some experience is required; the diagnosis of *deviation* is the most difficult.

DIAGNOSIS.

The first thing a practitioner has to do when consulted for gleet, is to examine well his patient with respect to antecedents, to ascertain if he had a scrofulous or cutaneous affection in his early life, or has been subject to gout or rheumatism. If there has been scrofulous affection, he may find some traces in the Meybomean glands of the eyelid, or in any gland of the neck, thigh, &c. In some instances, all traces of scrofulous disease have disappeared, but still the complaint is of a scrofulous nature, and then the history of the early life of the patient may give us a hint. We must find out if he is disposed to *blenorrhagies* of other organs. We must try to ascertain by all means if there is any constitutional taint which keeps up the gleet. Hunter already tells us, (page 219, on Venereal Disease,) "I have suspected there is something scrofulous in some forms of gleet." I do not think syphilis has *en général* anything to do with it, but I have seen two cases cured by the decoction of Zittmann, when all other treatment had failed, and I shall speak again of them in the chapter on treatment.

I insist very much on these details, because generally in treatment of gleet such things are neglected and *empiricism* prevails. As many causes produce gleet, it is easily explained why so many remedies have been used empirically, and have been sometimes successful. But when gleet is not kept up by organic disease, scrofula is one of the most frequent causes of its continuance, and for this reason iodine has been so much lauded for its cure.

Having satisfied himself about the antecedents, symptoms, and constitution of the patient, the practitioner goes on to the local examination. He is to inspect carefully the walls of the orifice of the urethra, and see if there is any hardening sensible to the external touch of the finger in the course of this organ. He should now try first by external exploration to find out the spot of the secretion in pressing *gently* the urethra between his fingers. This pressure should be made in distances of an inch, and going gradually backwards towards the anus. In some cases I believe I have discovered the seat of the secretion by this method, but the other means should not be neglected. After having gone through all these proceedings, the instrumental exploration is necessary.

PROGNOSIS.

The prognosis can only be given after careful examination. We can give a good prognosis if the gleet be of short standing, if no organic contraction sensible to the explorator have taken place, and its cause be a constitutional one. In deviation of the membranous portion of the urethra the prognosis is generally favourable, but the treatment is very long. I have noted three cases of deviation in my note-book, of which only one had not been cured by the mechanical treatment. If the gleet depends on *organic* change of the parts composing and enveloping the urethra, the prognosis is not favourable.

I make use of the terms pathological and organic change very often in this treatise, and I have previously explained what I mean by it. Organic change does not admit of radical cure by the mechanical treatment; neither is any internal remedy or injection of any avail; the prognosis is therefore very bad. The prognosis is better where only a pathological change exists. But in both cases it is difficult in the first instance to make a sure diagnosis; only during the treatment can both these affections be distinguished, because, when there is already a new fibrous tissue formed, we overcome the contraction by mechanical treatment; but very soon it contracts again, and gleet continues; yet in very old cases, I have frequently remarked that gleet ceases or diminishes very much, and the contraction remains. As I have already mentioned, in deviation of the interperineal part of the urethra the prognosis is favourable, but the treatment is very tedious; and for this reason I can explain why Monsieur Vidal de Cassis asserted, in his late work on syphilis, that *blenorrhée* (as the French call it sometimes) must be treated for a long time with bougies.

When the probe-staff does not indicate any pathological change, the prognosis is always favourable. In slight *contractions*, which sometimes are not easily discovered, I have found that when they recur a short time after dilatation has been practised, the prognosis is not good.

I had a case of this description under my care for three years; in this instance the contraction was very slight. I dilated 3 to 4 months with perseverance, but after a few days the contraction could again be felt; no treatment was of any use, neither mechanical nor medical. In one of those despairing cases I used the knife, (as the patient was anxious to be cured,) and divided sub-cutaneously, according to my method, the contracted spot; the result was very favourable, a complete cure having been effected. Yet in this case the retraction was very slight. An ordinary bougie passed easily, but the ballstaff discovered directly, when there was no dilatation used for some days, the contracted spot. I would not venture to assert that in every instance the knife will effect a radical cure, because, in the first place, very few patients will submit to an operation of which they do not feel the necessity, there being no sensible obstacle to the passing of the urine; and, secondly, having succeeded only in one case, I do not feel sufficiently authorised to recommend this method. I only state a fact, leaving it open to the future to decide. Experience has also taught me that there are cases of gleet, in which no treatment whatever is of use, and in them I have found invariably that the *contraction* returns after dilatation by the bougie, it matters not for how long a period. Some very learned continental surgeons and specialists have asserted, that precisely in these cases dilatation has not been carried on either long enough or far enough, and the patients were submitted to another long course of dilatation, but without any good result. To this error I was myself liable some time back, but strict practical observation and necroscopy have enabled me to understand the reason of the obstinacy of those cases.

In looking into my case-book, I find there twelve cases carefully noted; all of them I treated mechanically, as they presented the symptoms indicating this treatment. It would occupy too much space to give their history. I will, therefore, only shortly relate that the cases 1, 3, 4, 5, 6, 7, were radically cured by the metallic bougie. In case 8, where I found after long treatment that there existed a slight contraction behind the *fossa navicularis*, the division of this contracted part was resorted to, and a cure was effected. The cases of 9 and 10 remained only four weeks under treatment, and I lost sight of them. Cases 2, 11, and 12, were not cured, because there existed organic changes in some parts of the urethra.

TREATMENT.

Having shown in the previous pages that gleet is rendered chronic, chiefly by three causes, the first promoted by a constitutional *cacochymy*, frequently accompanied by local weakness of the affected parts; secondly, by a pathological change of the parts constituting the urethra; thirdly, by organic change of the corpus spongiosum at one or several spots of the urethra; I will now endeavour to give the treatment suited to these different states. The treatment may be divided into the medical and surgical. The first consists either in the administration of internal remedies, such as the balsams, either alone or in combination with other remedies, or jointly with different injections. The agents used with some advantage, as recorded in the annals of medicine, and some, according to my own experience, can be brought under the following order of classes:—

1. *Alteratives,*—as Iodine, iron, electricity (local), violent exercise; and for injections, bichloride of mercury, nitrate of silver.
2. *Specifics.*—Balsam. capaivæ, cubebs, turpentine, secale cornutum, balsam. peruvian, cantharides.
3. *Tonics.*—Bark, redwine (general and local as injection), sea bathing, cold bathing.
4. *Astringents.*—The different salts of iron, principally iodide of iron, perchloride of iron, the salts of lead, sulphate of zinc (the mildest and best), chloride of zinc, nutgalls (injection), alum, chloride of lime (internally and injection), &c., &c.

There are, besides these remedies, an immense number used empirically; gleet had the same fate, in a therapeutical sense, as all diseases, of which the pathology was incompletely known.

We could write a whole book only in enumerating the different remedies ignorantly recommended for this disease. But how could it be otherwise, as only modern surgery has paid scientific attention to gleet? Patients consulting about gleet of long standing, have generally used and exhausted the greater part of those remedies; they present a collection of prescriptions, which is prodigious; they speak with contempt of baffled medical science, and some become quite sceptical about our skill. Others relate their sufferings with a kind of hysterical despair; they exclaim,—Is it possible science should not be able to cure such a little drop!

The first basis of all rational treatment of gleet is a careful and attentive exploration of the urethra by the elastic ball-staff. When we have satisfied ourselves that there exists no tightening, swelling, or hardening, at any part of the urethra, we must try to discover if gleet is kept up by deviation at the interperineal curvature. How the deviation can be discovered by the wax and metallic bougies, I have shown previously. Patients object very often to an exploration of the urethra; there exist some popular reasons for it.

Firstly, exploration has been used in past time only *in extremis*, in such cases as stone in the bladder, stricture, disease of the prostate gland, very serious diseases, of which patients often die. These events remain on the popular mind, and in such a degree that when we speak to patients about exploration, they take alarm, and refuse to submit to it; we should then explain the necessity of the operation in order to convince them of its importance.

A second reason is, that an exploration of the urethra by a rough or inexperienced hand is very painful, particularly to individuals of a nervous disposition, and a patient once roughly handled will not easily submit a second time. In our books we find *irritable strictures* very often spoken of. I believe the largest number of strictures are of this irritable nature; roughly treated, they get worse, and at last no bougie can be passed. I have found that the passage of the first bougie is generally painful, but gently used the patient can and will bear it. We must, therefore, be careful and very slow in such explorations, avoiding needless pain; and in being slow we are able to form a better judgment of the state of the urethra. But one of the most important reasons for using the bougie gently is to avoid urethral fever. It is well known amongst the profession that any operation concerning the urethra sometimes brings on urethral fever, which imitates the intermittent type, and this protean form has been fatal in several instances. Even after a simple catheterismus this form of fever has been noticed. I have myself rarely seen in my practice of late years this form of fever, and I certainly ascribe it to my very careful and discriminate use of the bougie. Once satisfied there is no pathological or organic change at any spot of the urethra, we must give up all idea of surgical or mechanical treatment, except in those cases where the bougie is used as the surest means to reproduce acute inflammation, and where all other means have failed to do so; but of this we shall speak again. We must now look to the constitution of the patient and his past life, ascertain whether there are any defects in his diet; and any impediments to cure, which may exist, must be removed. If *cöitus* has been used excessively, it must either entirely cease or at least be used sparingly. In cases of gleet, depending on local weakness, I have always observed that cöitus has not a marked influence on it, if not indulged in to excess; but the influence of *cöitus* is much greater in the other conditions of gleet.

In countries where a great deal of beer is consumed, it is generally observed gleet is more frequent, and gonorrhœa also much more frequently assumes the chronic form. I am not able to draw with certainty the conclusion that beer alone produces this chronic state. I think the climate itself has something to do with it, and in damp climates, as England, Belgium, and Holland, the same disposition has been observed; but I have certainly remarked that patients affected with gonorrhœa or gleet have it increased after the use of beer, and gonorrhœa is more inclined to become chronic when the patient indulges in drinking beer during treatment. I recommend therefore the use of the light red French wines, and for the poorer class the use of gin and water is preferable to the use of beer.

It is only in exceptional cases that we are obliged to have recourse to antiphlogistics, and in very few instances have I seen benefit from the application of leeches. There may be some exceptional cases where the use of leeches may be indicated, but the symptoms of congestion and hyperœmy of the affected parts must be very apparent, and such cases are very seldom met with. We *sometimes* see cases of gleet which are cured by nature, after no remedy has been taken for a long time. I would not say I have seen a great number of such cases, but I have observed some, and Hunter says, (p. 219, on Venereal Disease,) "This disease, however, has not always the disposition to continue, for it often appears to stop of itself, even after every method has been ineffectually tried. It is most probable that this arises from some accidental changes in the constitution, not at all depending upon the nature of the disease itself."

The medical cure is affected by the use of one of those remedies called specifics, as cubebs, copaiba, turpentine, balsamum peruvianum, tinctura cantharid., ergot of rye, &c. These remedies are taken internally, and when after eight to ten days we see there is no change in the disease, we may be sure they will not cure the complaint, and have not sufficient action on it. During the last two years I have used in acute gonorrhœa, and also in gleet, the copaiba as an injection with excellent benefit. Abernethy used the copaiba as an injection, not just directly as an injection against gonorrhœa, but for ulceration of the urethra and vagina. Since then it has been proved without doubt, that it is the local passage of this remedy through the urinary organs, which cures gonorrhœa. I have myself very often tried the copaiba in emulsion as an injection in cases of gonorrhœa, but the result has not always been very satisfactory, and I believe that might be one of the reasons why the profession at large have not approved of the injection.

Then I tried the oleum volatile copaibæ as an injection, in the following formula :—

℞ Ol. volat. copaib. ʒi
p. gumm. acaciæ, ʒii
Aquæ fontan. ℥vi
MDS. for injection.

This form I found to answer extremely well. In making use of this injection, either in gonorrhœa (after the inflammatory state has passed away) or in recent gleet, some precaution must be taken, not to let the external parts come in contact with the injection, because it irritates the skin of the *prepucium* and the testicles so much, that erysipelas and some *phlyctenæ* are formed, which are alarming and painful to the patient.

The first injection should not be allowed to remain in the urethra longer than one or two minutes. It should not be used more than twice a day in the first two days. After eight or ten injections I increase the quantity of the oleum volatile copaibæ, and the injection may be left also a longer time in the urethra. After eight to ten days, when the urethra is accustomed to the injection, it may be used more frequently, and left in from five to ten minutes. This kind

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of treatment I have found extremely beneficial in many cases.

I cannot refrain here from making an observation about injections in the urethra. The remark is frequently made that they sometimes produce *orchitis.* It may be that some injections do so through their caustic and irritating nature, but in the greatest number of cases I convinced myself that the injection pushed with great force into the urethra acts quite mechanically, like a large bougie, and this violent mechanical dilatation by the liquid produces *orchitis.* Since I came to this practical conclusion, I have recommended my patients to use injections very gently, and since then I have not seen any cases of *orchitis* occur. This observation is applicable to any kind of injection, and I have seen *orchitis* take place even in cases, where only tepid or cold water has been thrown with force into the urethra, and such an occurrence will happen principally in persons of irritable constitution.

But simple treatment will not succeed in all cases, and when we have before us some constitutional disturbance we must use other remedies to combat it. The alteratives must be called into action. In a case of scrofulous dyscrasy, iodine must be had recourse to; iron, violent exercise, with the local treatment of injection of nitrate of silver in weak solution, must be combined. Next to the injection of nitrate of silver the bichloride of mercury sometimes does good service. Local electricity in such cases has sometimes given me good result. Yet I much prefer iodine as one of the most useful remedies in gleet. A most striking case of scrofulous cachexy, in producing gleet, came under my observation about twelve months ago. A gentleman from Paris, Mr. K., came to London affected with gleet, the sequel of a gonorrhœa with *orchitis.* He had all the symptoms of scrofulous diathesis. I began directly to give remedies for the scrofulous affection; having seen in his previous prescriptions that all kinds of specifics were given, and that astringent injections had been used already. But a short time after the beginning of my treatment, the gentleman got chancre after a suspicious *cöitus.* I was obliged to leave off this treatment, and use instead of it a mercurial one. The gleet remained the same during the mercurial treatment, and had even a tendency to increase after a lapse of some time: I prescribed mercury with iodine, and afterwards iodine alone; as soon as iodine was used again the gleet became better, and ceased completely during its use, without any local treatment.

In cases where iodine without local treatment will not succeed, we must combine it according to the indications and circumstances with the strengthening and alterative method, either generally or locally, by the use of alterative and astringent injections. Of all preparations or compounds of iodine, I prefer the iodide of potash, because it is taken very easily by the patient, and the stomach rarely is affected by it, without the least troublesome symptoms. In some obstinate cases I have given with good result the iodide of potash, in conjunction with pure iodine, giving twice or thrice a day a tablespoonful of a mixture consisting of two or three drachms of iodide of potash, and a quarter to half a grain of pure iodine, dissolved in eight or ten ounces of distilled water. Formerly I tried in those obstinate cases the tincture of iodine, but this remedy is not so well borne as the above-mentioned preparation.

I must again repeat, that in the treatment of gleet we must not be too exclusive in the simple remedies, and I must confess, sometimes I used iodine, according to the above-mentioned indications, and the patient got somewhat better; but this improvement remained stationary. In such cases I combine the iodine with iron, particularly when the patient looks pale and puffy.

There is a hygienic method of treating gleet, which is sometimes successful—a *manœuvre,* which puzzled me very often in my earlier practice; viz., violent exercise. From analogy we should think quietness and repose would be advantageous to the cure of gleet; but I have seen in some instances, that by keeping the patient too quiet the gleet has been much increased, in apathetic and phlegmatic constitutions. In such cases violent exercise is of great benefit; for example, riding on horseback, hunting, dancing, and fencing. I first thought that in hunting and going on horseback, it was not the exercise which produced a change in the malady, but rather the change of air; but in some other cases where violent exercise, as dancing, gymnastics, &c., was resorted to *in loco*, the result was not less striking, and the complaint ceased. Yet the practitioner should well select his cases for this hygienic rule, because in nervous and irritable persons violent exercise is objectionable, and in them increases gleet.

The combination of the *remedia alterantia* with the specifics, as the iron with secale cornutum, has rendered me some service. A very useful prescription is the following :—

℞ Secal. cornut. ʒiss
Ferri carb. ʒii
Pulv. vanillæ, gr. vi.
Camphor. gr. vi.

F. pulvis, divide in partes equales, No. 24, dentur ad vitrum bene clausum signat. To be taken, a powder morning and evening.

In two cases, where all other remedies failed, the above prescription did very good service, after the use of the remedy for four weeks.

With the internal use of the specifics or alteratives, injections can be combined. These injections are of a twofold character, either acting as alteratives or astringents on the affected parts. They are used either as superficial or deep injections. If we are convinced gleet has its seat either in the *fossa navicularis* or spongy part of the urethra, superficial injections of slight pressure are quite sufficient to reach the affected spot. How these spots can be ascertained we have described, when speaking of the diagnosis in the previous pages.

If gleet has its seat high up in the urethra, behind the bulbous and in the muscular portion, we must use deep injection. I have observed in practice that patients do not inject properly, and the practitioner should take care, every time he recommends injections, to give good instructions and directions to his patient how to use them. The superficial injections can be administered *à la rigueur* by the patient himself; this is not the case where deep injections are necessary, it must be done by the practitioner himself, to be of any use or advantage. I have tried several modes of injecting, and found them faulty in many respects, principally when the injected liquid is strongly irritating, because, with the ordinary mode of injecting, both the diseased and healthy parts are reached, and I have seen in several instances troublesome results follow. If we have to inject a liquid not very irritating to the healthy parts, we must push the liquid slowly into the urethra; we must previously calculate how much liquid is necessary, because the length and breadth of the urethra is different in different individuals; and when we desire to be very exact, we can make an explorative injection with tepid water, in order to ascertain the capacity of the urethra, which we effect by measuring the injected liquid on its return.

When the urethra is full of the injection, the syringe is to be withdrawn, the orifice of the urethra to be kept closed, either by the patient or the surgeon, and the liquid must be pushed to the deep part with great precaution.

These remedies are either strongly alterative or cauterising; some are caustic and astringent. At the head of the first class stand the nitrate of silver and the bichloride of mercury; the second class comprises the *ioduret* of iron, the perchloride of iron, the perchloride and sulphate of zinc, pure red wine, and alum.

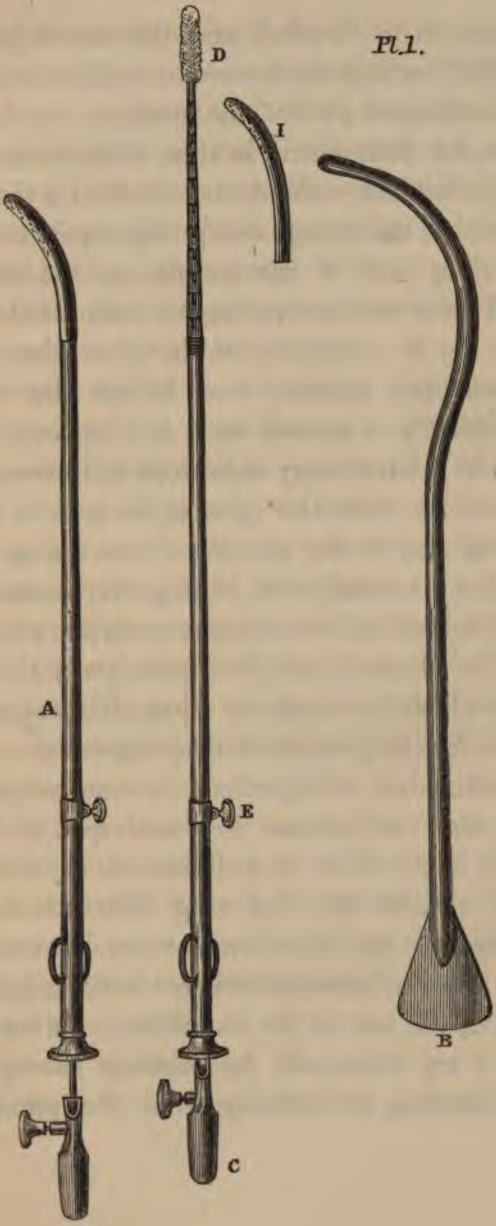
The indications for deep injections are twofold :—

First. In long standing gleet, where a great deal of specific and alterative remedies have been used already internally without benefit, in individuals of lymphatic constitution, where, by *local examination*, no organic or pathological change is found to exist. If there is any deviation in the intra-perineal portion of the urethra, if there exists any tightening or swelling at any deep spot, sensible to the explorator, no injection should be used till those deformities are removed.

Secondly. Injections can be resorted to after the use of the bougie, and in six cases recorded in my casebook, gleet has been cured by deep injection after the previous use of the bougie.

The instrument I use for deep injections is a platinum or silver catheter with only a slight curve (plate 1, fig. A), of which the urethral end is pierced by many small holes, so that it has the aspect of a sieve. A stylet, *mandarin* (plate 1, fig. C), slides inside with a sponge at its end (plate 1, fig. D). The end (plate 1, fig. I) of the instrument can be screwed off; by this arangement the sponge (plate 1, fig. D) can be wetted in an irritating or caustic liquid; it is then brought back into the canula, and the sievelike end (plate 1, fig. I) screwed on. The

Pl. 1.



instrument is to be oiled, and the cursor (plate 1, fig. E) fixed so that the instrument shall accurately reach the diseased part of the urethra.

The stylet (mandarin) is then to be pushed forwards against the ends of the canula, by the pressure of which, the sponge lets go the liquid through the sievelike part of the canula on the affected spots. I have seen several ingeniously constructed instruments, in which the canula opens when introduced into the urethra, and brings the wetted sponge directly in contact with the mucous membrane; but I have many objections to those instruments, because first the opening is painful to the patient, as also is the contact of the sponge with the urethra; secondly, in closing the instrument before withdrawing, the mucous membrane is very liable to be pinched, and it is principally this last objection which has made me reject all opening instruments for the purpose of deep injections.

In making use of injections in cases where the ballstaff does not indicate the exact spot to which we should apply them, it is difficult to say how far we shall advance the injecting instrument. In such instances we must endeavour, by external manipulations, to ascertain where there might be, *à peu près*, the seat of the complaint. In my own practice, I try repeatedly by pressing gently outside the urethra, in rubbing from the perineum towards the orifice of the urethra; in repeating several times this external exploration, I at last discover, *à peu près*, the seat of the complaint, if it is not too near the *prostata.* In doubtful cases the whole deep part of the urethra, prostatic as well as the membranous portion, must be slightly cauterised by the injecting instrument.

The irritating, alterative, or cauterising liquid is either pure or diluted with water. It is difficult to give certain rules for the indications of those different remedies. In some cases the diluted perchloride of iron answered very well in my practice (30 drops of it in one ounce of water), in others it failed; the most useful is certainly the nitrate of silver; preparations of iron and iodine have in some cases given me good results, where the nitrate of silver failed. Strong cauterising injections should not be used more than once every two or three weeks, because this time is necessary to judge the result of the operation; weak solutions can be used every day. In individuals of very nervous constitution, we must be cautious to avoid urethral fever and *stranguria.* We must have injecting instruments of different sizes; where the nitrate of silver is indicated, I confess I prefer the solid nitrate of silver brought to the affected spot by the *porte-caustique.* I may here remark that the methods of injecting which are fully described in different parts of this pamphlet, are the only efficacious means of using those agents, and that all other modes known to me are faulty.

In certain individuals the deep part of the urethra, principally the muscular portion, is of such irritability, that neither an injection nor the introduction of a bougie is borne by them. This irritability is very peculiar to the urethra and to the rectum, and sometimes a very slight cause, as a simple denudation of the mucous membrane of the rectum, increases it to such a pitch that nothing is borne by these organs. In the rectum it is more obvious to the eye, and very likely similar causes exist in the deep muscular part of the urethra. But what convinces me more of the similarity of both cases, is that cauterisation cures and removes this irritability in both.

In those instances of gleet where deep injections, or bougies are not borne without very great pain, or where urethral fever is to be feared through their use, cauterisation must be practised at the affected parts. In some strictures of the urethra, this irritability is very great, and the partisans of cauterisation for stricture have been greatly misled in ascribing all benefit to the cauterisation in removing the stricture. The effect of the caustic is merely to remove the local irritation, and thus make dilatation and the use of the bougie possible. In stricture we find this irritability at the seat of the stricture; in gleet the irritability is generally in the deep portion of the urethra.

As I have previously stated, in cases where the disease is traceable by the exploring instrument, I prefer the use of the solid nitrate of silver; but in cases where we find irritability, without being able to indicate the exact spot of those deep parts, I employ the deep injection, made with a strong solution of that salt; and for this purpose a proper instrument, as previously mentioned, should be used. With the ordinary injecting syringe, deep injections will never be successful for several reasons:

First, the anatomical structure of the urethra prevents the injection going farther than the bulb, because, in the normal state of this part, there exists a slight tightening, and a slight mucous fold at the beginning of the bulbous portion, which prevents the advance of the injection. When we have to inject only weak solutions, syringes can be used, having a canula reaching to the bulbous portion; and in cases where strong injections are indicated, we must use the instrument armed with the sponge and sievelike end. Another reason exists, why strong injections should not be used without a special instrument; that we hazard the patient's life in forcing the strong injection into the bladder, of which occurrence I was myself a witness, and that too in the practice of a specialist of some reputation. The victim was a dentist, who got such a violent cystitis after the injection that for a time his life was despaired of. Some surgeons use curved or bent canulas attached to the syringe, believing that slight pressure with those long canulas is sufficient to bring the liquid in contact with the deep parts. This may be, but I would never advise the use of these instruments for strong injections, for the reasons previously stated. The best instrument for weak injections, and in cases where the injections are to be carried down deep in the urethra, is a syringe armed with a canula 3 to 4 inches long, terminating in an olive form, pierced with several small holes, because if these holes are large, and have sharp edges, the introduction is painful to the patient. In some of my canulas I had a central hole made in the olive form extremity of the canula, of which the borders are very blunt; by this precaution the above-mentioned pains are avoided. In cases where we find it necessary that the weak solution should bathe a greater part of the surface of the urethra, we can begin to make a deep injection with the syringe, armed with the olive-form end canula; and then withdrawing it inch by inch, we can repeat the injection, till the whole surface of the urethra is touched. I have dwelt at length on the subject of injections, because their benefit is very often frustrated by the faulty mode of their administration, or the carelessness of the patient, of which I have seen proofs in a great number of instances.

I have met with individuals whose urethras are so sensitive and irritable, that they do not bear any kind of injection either in clap or in gleet, simple tepid water or any mucilaginous or oleaginous liquid increasing the discharge. I have combined soothing and narcotic remedies with them, but they were of no use, and after five to six days' trial, I left off all local treatment, and had recourse to internal remedies.

Hunter, in his work on Venereal Disease, relates two remarkable cases of gleet cured by the breaking out of two chancres: he says, "I knew a case of obstinate gleet, attended with very disagreeable sensations in the urethra, especially at the time of making water, removed entirely by two chancres appearing upon the glans. The patient had taken all the remedies commonly recommended, and had applied the bougie without effect."

I myself know a case of inveterate gleet, where the patient, a solicitor of this town, in consultation for another complaint of his urinary organs, told me that his gleet had been cured by the application of blisters in the neighbourhood of the penis, kept up for several weeks. Hunter reports two cases (page 224, l. c.) cured by blisters. I have used blisters in many old cases of gleet, but I cannot say I have seen any great benefit from the use of them. There may be some rare cases where this treatment is sometimes beneficial, particularly individuals having rheumatism, and as the remedy is without danger we can try it; but as far as my own experience goes, I have not seen any benefit from it. In nervous constitutions, where the urethra is in an irritable state, *opium*, *aqua laurícerasi*, *aqua cerasorum nigrorum*, *aqua lactucæ*, &c., may be injected in conjunction with other proper means. I have seen very good effect derived from the injection of tincture of opium alone, yet the injection of the pure tincture is not well borne by some patients, and I would advise it only where it is borne without producing great pain; for those who cannot bear it, I use it diluted, either alone or with other remedies.

I must not forget to speak of a very important method of treating gleet, principally in this climate, and this is by strengthening remedies, either generally or locally. Amongst these means, the red French wine, internally or locally, has proved in my practice of great benefit. Sea-bathing and cold-bathing are very efficacious, principally the first; and I have seen many cases do well at the sea-side.

Two cases of gleet have been cured by that old

German compound, the *decoctum Zittmanni.* Both cases are remarkable enough to be reported. The first was a merchant of London, who got clap in 1848, gleet remained after, and no remedy or treatment did him any good; two years later the gentleman got syphilis. Having taken for this complaint the usual remedies, as mercury, iodine, and different kinds of vegetable remedies, without a decided result, the *decoctum Zittmanni,* so much lauded by Professor Chelius, of Heidelberg, was resorted to. The syphilis was not only cured by it, but also the gleet ceased, and since 1850 he has not been troubled by either of those complaints. I state simply the case, refraining from all comments. The other case was an assistant to a chemist; he was treated in Paris for gleet by the most experienced specialists, but came to London without being cured; in London he got syphilis, and, as in the first case, all rational antisyphilitic remedies failed to master the secondary symptoms. The *decoctum Zittmanni* was ordered, and both complaints were cured by it. In both cases, I must state, I never could perceive, by means of the exploration, any abnormity of the urethra.

But I repeat it emphatically again and again, all internal means or injections are useless, when there exists a pathological or organic change in the urethra, and in these cases only surgical treatment will remove the disease.

SURGICAL TREATMENT.

When there is any chronic inflammation of long standing in the urethra, there may either be a local swelling at one or several spots, or deviation at the muscular and intraperineal portion, or an organic change at any part of the urethra. I have already explained these anomalies in treating of the morbid anatomy of this disease. All these complaints must be treated by mechanical means, and a kind of orthopœdic treatment (if this expression may be allowed) must be resorted to. The bougie is the only remedy. In the works of the old writers on surgery, we find the use of the bougie recommended, and they used it quite empirically; they observed the effect, but they could not rationally explain its action. Old Deacon says, in his pamphlet (page 55), "In the cure of the gleet, that is situated high up in the urethra, bougies sometimes are serviceable, particularly those prepared with extract of lead, as directed in the 10th part for strictures; but bougies being very liable to dilate the parts, should never be used unless absolutely necessary, when other remedies have been employed to no purpose." In citing the words of Deacon, it is not my intention to admit by this, that I agree with the opinion of this surgeon, because I believe he has much exaggerated the danger of dilating the urethra. Gradual dilatation is very well borne by the urethra, and gradually and slowly done it is astonishing to what a degree the urethra may be stretched. There lies the secret also of the use of lithotritic instruments. Hunter, in his work on venereal disease, page 217, speaks of disagreeable feeling excited by the original disease (gleet), but he is quite mistaken when he believes those disagreeable feelings follow a cure of gleet; they rather indicate that the cure has not been effected. He thinks those morbid feelings are of a nervous nature, and he recommends for their removal the use of the bougie.

In some rare cases, nervousness may be the cause of the morbid feeling; but, as a general rule, I have found that in instances where those disagreeable feelings exist, there we have to deal with either a prostatic disease, or with a pathological or an organic change in the urethra.

But the bougie acts not only as a mechanical means, giving to the canal its previous size, producing salutary pressure on the injected vessels of the affected parts, and redressing deviation, it also is a powerful alterative, converting in gleet the chronic inflammation into an acute one, and cures, not unfrequently, by its use alone, or in conjunction with appropriate medicines. There are instances of gleet without the least sign of *deviation*, *swelling*, or *tightening* in the urethra, in which I have found the use of the bougie *perfectly succeed when other remedies had been unavailing.* It brings on a new inflammation, and the specifics and other remedies, which had been given without the least benefit, previous to the use of the bougie, now, curious to say, do good service.

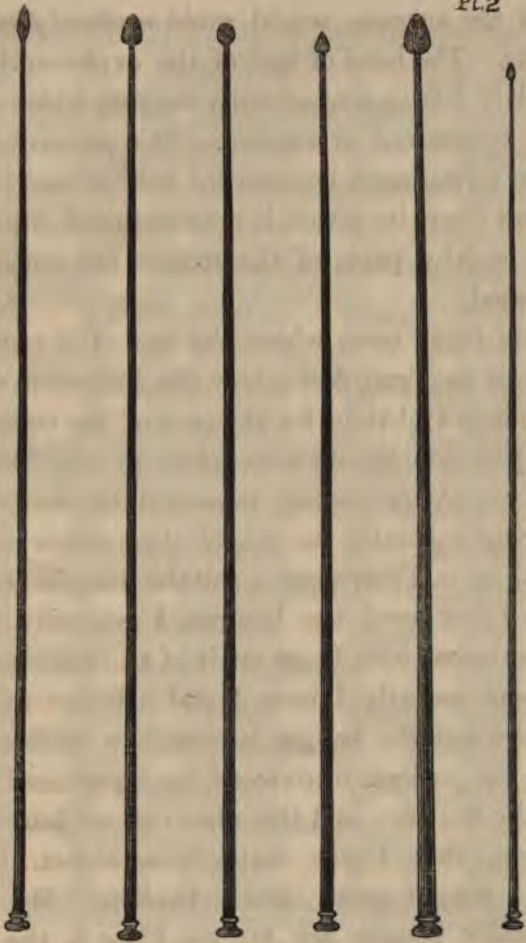
After the first irritable state of the inflammation has ceased, it is time to administer the specifics, and the patient recovers. In these last-named instances, five to six weeks are sufficient for the use of the bougie. But in cases of essential change in the urethra, the use of the bougie must be much longer continued. Cases have come under my notice, where the use of the bougie was necessary for three to four months. Where organic change (true stricture) has taken place, cure even by the bougie is very *problematic*, and I must confess I have not seen one such case of gleet cured by the bougie. In the present state of science, we cannot beforehand distinguish (and I wish we could) if organic change has taken place at any spot of the urethra, after the first examination with the ballstaff, *because the concentric* and *parenchymatous swelling of some spots of the urethra are in the same manner sensitive to the exploring ballstaff, as a true-established stricture with organic change in the tissue.* I came to this conclusion quite by observation, and by inductive reasoning. I felt in first probing my patients those different obstacles. In cases where cures were effected, the obstacles disappeared, and became insensitive to the ballstaff; but in those where no cure took place, the affected spots remained always in the same contracted state, even two or three years after the first examination. In some rare cases of *deviation* I made the same observation, yet I must confess, deviation is more readily cured; but perseverance in the use of the bougie is in many instances for a long time required, and then in the majority of cases a cure will be obtained. A striking case of deviation I met in a German gentleman, Mr. L——, who had contracted gonorrhœa, and the subsequent gleet was of a year's standing, when he came to consult me about his complaint. He had tried all the usual remedies for curing his gleet without effect. After a minute examination, I could not find anything more than a slight deviation at the intraperineal portion of the urethra. I used metallic bougies for two months, and by their means effected his cure. The gentleman went afterwards to New York, and again contracted gonorrhœa. He had gleet afterwards, and having taken all kinds of remedies for its cure without good result, he wrote to me from New York for my advice, and I directed him to use the bougie, because the same result had probably taken place as in his previous affection; and after the use of the bougie he was very soon cured. I saw the gentleman on his return from America, who informed me of his complete cure, my advice having been adopted.

I had another case in my practice, where a gentleman had contracted gonorrhœa three times, each time followed by gleet. After each gonorrhœa, I found by careful examination that the gleet was kept up by deviation, and no remedy was of any service till the bougie was resorted to. This last patient I watched with great care, tried different kinds of specifics and injections, but without benefit; the bougie alone effected a cure each time.

I am guided in the use of the bougie only by local examination. It matters little, if the secretion is small or abundant; because the secretion by itself is not at all indicative of the degree of mischief which has taken place in the urethra. The secretion may be very small, or almost imperceptible, but still the disease may already be far advanced, a condition every surgeon must have observed sometimes in very old and hard strictures; and so, *vice versâ*, the secretion may be abundant, and the disease in only an incipient state.

I generally begin the mechanical treatment, when indicated, with the exploring ballstaff, see Plate 2, and a third of my patients have been cured by its

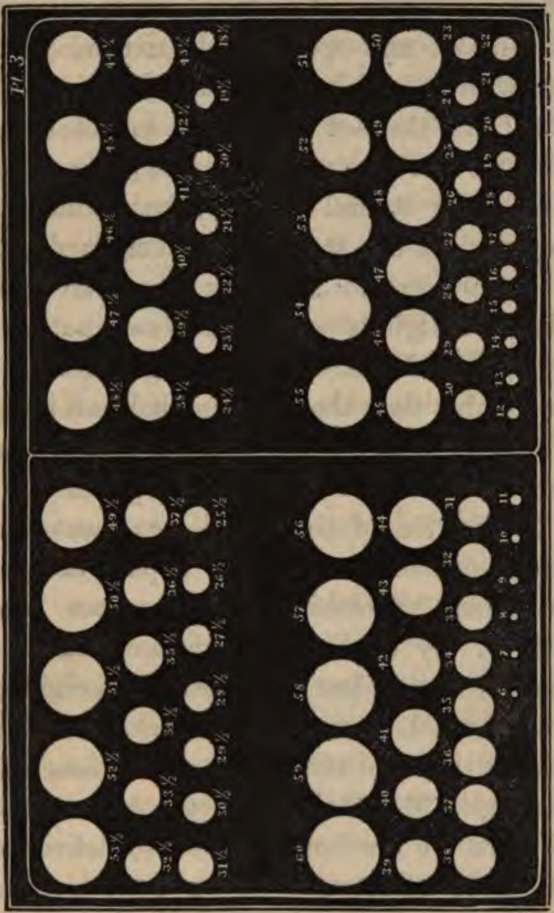
Pl.2



use alone. An explorator, being selected of the size of the contraction, is left from five to fifteen minutes for ten to twelve days. It is essential to begin with the introduction of explorators of not too large a size, if the surgeon would avoid *urethral fever* and *orchitis.* The head or ball of the exploring bougie should be left in contact with the part which is felt either contracted or swollen. This proceeding has certain advantages, because the ball presses just on the spot where its action is most required, whilst the other healthy parts of the urethra are not dilated or pressed.

In all those cases where the use of the *metallic bougie* is required, and where the indication of the elastic is not obvious for the cure of the complaint, its application should take place in the following manner:—After having measured by one of the exploring ballstaffs the size of the swollen or contracted spots, I introduce a suitable metallic bougie. When I first used the bougies, I generally began the treatment with those made of an elastic matter, but more recently I have found it better to begin with the metallic bougie, because it is far less painful to the patient, introduced by a practised hand, than the flexible; and this observation I have made so often, that I can state it as a fact. Why it is, I cannot quite clearly explain. My series of metallic bougies are 60, see Plate 3, the same number as Monsieur Benniqué recommends for dilating strictures gradually.

The form of the bougie is after the drawing Fig. B, Plate 1.



I have given the drawing, thinking it more illustrative than any description. We are not obliged to begin with the lowest number, but, as I previously stated, with a number suiting the mischief. In cases of *simple deviation*, without tightening at any spot of the urethra, we must begin with a number suiting the size of the urethra. In the last instance it is not necessary to increase the size of the bougie; the same size can serve for several *séances;* but I find it advantageous to use it for six or eight days, and then to proceed to a larger size. In cases of swelling or tightening, what I call pathological changes, I find it advisable to begin even with a lower number than the exploring ballstaff indicates, to avoid all kind of traction, dilatation, and resulting irritation of the genital parts. In the *first application* of the bougie we must be particularly cautious, or we shall expose the patient to an attack of orchitis. I have seen cases of orchitis in my own practice, when I first began to use the bougie, but during the last eight years I have never had one case of orchitis, and I can ascribe it only to the strict precautions of my proceedings. Should it occur, the best treatment is to leave off the bougie, and order five or six injections of cold water to be thrown into the rectum daily, there to be retained as long as possible, and to bind up the swollen testicle in a starch bandage.

Another accident in the use of the bougie is urethral fever, but this I have never observed in my own practice; yet it is reported to have followed catheterism by many surgeons, and is alluded to in some treatises on this subject.

The first day, I just introduce the well oiled metallic bougie, and let it remain there about half a minute or a minute; the following day, half a minute longer, till the patient seems to be accustomed to the presence of the foreign body. I do not think it necessary to detail here the rules of introducing the bougie, which are found in all books on surgery. The only point worthy of notice, is the passage of the triangular ligament. I know very well the same observation is made very frequently by other writers, but I think only a long and careful practice will teach the practitioner how to get this tact and the required experience. Besides, I have found the inclination of the pelvis and the configuration of the abdomen of the patient in many instances change the curvature, which the urethra forms near the triangular ligament; but the best rule is always to study this curvature in the individual, to be slow and careful, not to lower either too soon or too late, the urethral end of the bougie; in doubtful cases, to follow the bougie with the finger outside of the urethra, and near the urethral curvature it is advisable to assist the advance of the bougie, by a slight pressure with the index finger of the left hand, in the perineal region; afterwards the bougie can be left in the urethra from ten to fifteen minutes or half an hour. In about three weeks a kind of reaction takes place. This reaction I have seen occur at different intervals, according to the irritability of the patient. In the smaller number of cases it did not take place at all, yet their cure was accomplished. This reaction is of an inflammatory nature. The patient has a feeling of heat and pricking at the orifice of the urethra; he is obliged to make water more frequently, and the secretion, diminishing at first, becomes more abundant afterwards. This diminution of secretion is very deceptive to the patient, who, seeing very little of it in the morning, becomes sanguine, believing himself to be nearly cured. But the secretion is only suppressed, or very much diminished for a few days, by the increased inflammation, and the increased inflammatory swelling is very easily felt in introducing the metallic bougie, by the hand of the experienced surgeon. It is prudent and advisable to previously acquaint the patient about this increase of the secretion, otherwise he gets very uneasy about it; but if made aware of it beforehand he is prepared to expect it. When the reaction takes place, I desist for two or three days from the introduction of the bougie, and recommend the patient to live sparingly and remain quiet. In some cases, where the reaction is not very marked, I do not leave off the bougie at all. As a general rule, it is very difficult to say how long the bougie should remain in the urethra; this must be left to the tact and judgment of the practitioner, and the constitution of the patient. In nervous and irritable subjects we must be on our guard, but I never leave the bougie longer, if even well borne, than half an hour. In each *séance* we can pass from two to four numbers of the series successively into the urethra; but each time, in passing a higher number, we must be particularly cautious not to dilate the urethra suddenly or violently. In passing the bougie, I prefer to have the patient standing, and have always found that position more favourable to its introduction than any other. The bougie should be very smooth and of soft metal, by which we are enabled to adapt its form to meet the requirements of each particular case. In the introduction of the metallic bougie, we meet naturally with the same difficulties as described in the books treating on catheterism: at the spots corresponding with the triangular ligament, the passage of the bulb, *fossa navicularis*, muscular portion, we must be particularly cautious, by following its normal bendings and windings, to avoid injuring the urethra, and causing pain to the patient. If we use small instruments, we must be more on our guard not to catch the *lacunæ*, which are sometimes very large in the urethra. Arrived with the bougie at the muscular portion, we meet frequently in some patients, and principally at the first introduction, great resistance, which, if we use violence to overcome, we create great pain; a contusion or laceration of the mucous membrane, with bleeding, may be the result, an accident easily avoided, and very alarming to the patient. Our object is best accomplished by waiting one minute, keeping the bougie gently against the spasmodically contracted parts; the spasm then ceases, and the bougie passes. It is not necessary that the bougie should be pushed into the bladder, and for avoiding this, it is advisable to measure the length of the urethra. During the treatment, the patient is not obliged to keep himself quiet, but he can do his usual business; still I have found it advantageous, that he should remain at rest for at least one hour after the operation is finished.

When the period of reaction takes place, the bougie is more difficult to introduce, and we feel distinctly the swelling of the mucous membrane. During this state, we must not increase the volume of the bougie, and it is advisable to take even a lower or smaller number, to avoid pain and bleeding. When the reaction has passed away, we go on in the usual manner. I carry dilatation as far as I can do it without overstretching, and it is astonishing to what a degree we can advance in this manner, if we go on slowly and cautiously. In some cases I have remarked a little spermatorrhœa during the treatment, but this symptom is without the least trouble, and I ascribe it to two causes:—first, because the patient is very abstinent from women during the treatment; secondly, through the presence of the bougie in the urethra, the spermatic apparatus may be irritated. The spermatorrhœa in this instance ceases very soon, and I have never been obliged to treat this incident medically. In cases of *deviation* and pathological change of the walls of the urethra, I have found it very beneficial to carry dilatation to the highest number of the *échelle* (see Plate 3) in proportion to the natural size of the urethra of the individual. Experience has taught me that in cases where dilatation has been carried as far as possible, the cure is rendered more certain. For the last-named reason we are obliged sometimes to cut into the orifice of the urethra, it being generally the narrowest part. This operation is very trifling, yet much dreaded by the patient, and I have been frequently obliged to use the strongest arguments to convince the patient of its necessity. But in small orifices this operation is quite obvious to the surgeon, because it would prevent his carrying on further the *redressement* of the urethra. The introduction of the first bougie is sometimes very painful, and not unfrequently fainting comes on, a symptom which is without danger. During the whole treatment by the bougie, the patient must wear a *suspensorium.*

Some practitioners do not attach great importace to the material used in the manufacture of bougies, but after what I have stated in the previous pages on the morbid anatomy of gleet, it is obvious that the metallic bougie can only fulfil this indication, that the flexible is unable to redress, dilate, or to compress efficiently in cases where such an action is required. In cases where we use the bougie only as an irritant and alterant, where no change has taken place in the urethra sensible to the explorator, the flexible bougie may do perhaps as well as the metallic; but for my part I prefer the metallic, which I find more manageable. During the whole treatment the patient must live soberly; he may eat meat and take good food, but the use of strong fermented drink and spices is objectionable. He should avoid *cöitus* in cases of material changes of the urethra; this last rule forms an exception in cases of local weakness of the mucous membrane; he should avoid the society of the other sex when, through them, the generative organs are excited.

Now, the result of the treatment is threefold: either the secretion ceases during the introduction of the bougies, and principally in this instance the *séjour* of the bougie should be very short at the end of the treatment (one minute). The subsequent exploration with the ballstaff cannot discover any abnormal state, and the patient gets well; this termination is the most desirable, and we can augur that the cure will be a permanent and most satisfactory one.

Or the secretion persists, but the ballstaff does not enable us to perceive anything wrong in the canal; and in this case I use an injection of an emulsion with essential oil of copaiba, as previously given; solution of the perchloride of iron, or a slight solution of the nitrate of silver; all these different kinds of injections have been very successful in my practice; but if one of these remedies does not succeed in five or six days, I leave it off directly and use the other. They succeed generally in all those cases where the urethra has been corrected by mechanical treatment of its pathological deformity. In weak persons, with scrofulous diathesis, I have used iron and iodine in connection with the specifics internally with good effect. All the above-named remedies, which have been used before the application of the bougie without benefit, act now in a short time, and a complete cure is effected.

The third and worst kind is the following: the bougie has produced reaction, but the ballstaff indicates by each subsequent exploration inequalities and tightening; or the metallic bougie, with the assistance of the wax bougie and ballstaff, shows us deviation at the intra-perineal portion of the urethra. In such cases we must persevere in the use of the metallic bougie five to six months. I have seen instances in my practice cured after such prolonged treatment. When after such a course no change has taken place, when the explorator at each time finds the same obstacle, we may be quite sure the treatment will not succeed; and when the patient insists on further attempts being made, something more decisive must be undertaken. In all those cases organic change has taken place, a fibrous tissue with atrophy (often) or hypertrophy (seldom) has been formed in the *mèshes* of the spongy tissue, which fibrous tissue is, generally speaking, extremely elastic, yielding at each introduction of the bougie; but one or two days afterwards the explorator discovers the diseased spots in the same state. They are in some individuals of such remarkable elasticity and yielding, that with a common straight elastic bougie it is impossible to discover them. I have, in several patients, shown to my colleagues in consultation the truth of this assertion. Page 20, I spoke of a kind of gleet kept up, as Sir Benjamin Brodie believed, by indurated follicles. When those tumours are old, hard, and of long standing, no medical treatment will be of use. I have not seen any good result by the use of the bougie. Their excision I have never tried, because it seems to me a very hazardous operation.

At the time when cauterisation was very prevalent, I tried this method very frequently in such cases of gleet depending on elastic strictures, but I failed in those particular instances without exception. I must state I used the nitrate of silver in those cases, but never the potassa fusa for that purpose. If the latter caustic should be more useful, as Mr. Lizars of Edinburgh believes, in this complaint, the future must decide; but I have a great objection to strong caustics in this disease, for the following reasons: first, in only small quantities the potassa fusa can destroy nothing, and by using more than a quarter of a grain we risk cauterising too much, and we are in the dark, being exposed to cauterise diseased and healthy parts indiscriminately. Secondly, everybody knows that the physiological action of caustics is just the contrary to that which it should be our intention to produce. Caustics contract parts to which they are applied; we see this in burns, either after the potential or actual cautery. But this principle was admitted even in the time of Hippocrates, and is affirmed in all old and modern works on surgery, both caustics being used in all kinds of relaxation of organs, as in *prolapsus ani* and *vaginæ*, &c.; how can it be that they should act otherwise on the walls of the urethra? I know pretty well the answer of the promoters of the potassa fusa. They tell us we destroy only the diseased part; but this is not possible in an organ like the urethra, hidden from the eye. Continental surgery has done away with cauterisation in such cases, and experience has incontestably shown its inefficacy. From the use of potassa fusa, I was deterred principally by the observation of its action on the tissue in two cases of syphilitic growth at the orifice of the urethra. This *condylom* I tried to destroy by the potassa fusa, the patient refusing the use of the knife for its extirpation. There remained such a contraction of the orifice after cauterisation, that I was obliged to dilate a long time subsequently, and in this case even dilatation failed, and finally I was obliged to incise the orifice and dilate afterwards. Of the other case I was told, another surgeon having made the incision to cure the contracted orifice.

Gleet, depending upon organic change of one or several spots of the urethra, can only be cured by cutting this tissue, an operation much feared by the patient, and accepted with great distrust by the profession. I certainly advise the incision of the organically changed parts, and shall adhere to the opinion I have formed until the advocates of escharotics come forward with something more substantial than their *experience*, a very elastic word, used by each observer from the point of view he likes best. But if we compare this affection of the urethra with other organic changes following inflammation in external parts, obvious to the eye, as in *ectropium*, *entropium*, following long-standing *ophthalmia*, the contracted skin after burns, and other long suppurations, it is quite clear we must do in the urethra what we do in other organs. Do we use the potassa fusa in such cases? Not at all; we use the knife; we displace, according to the rules of autoplasty, cicatrices and contractions of the skin; we make incisions for the cure of *ectropium* and *entropium*, try to elongate and displace; and the same rules we *must* follow in organic contraction in the urethra. Operations in the urethra are certainly more dangerous than in other parts; but if we take the necessary precautions in the after treatment, I do not think they are attended with greater danger. It is the after treatment which is generally erroneous in the practice of the promoters of cutting strictures, as I have shown in my memoir sent to the Académie de Médecine à Paris (séance du 23 Octobre, 1855), "De la methode souscutanée de couper des rétrécissements de l'urètre." In the instance where nothing can cure gleet associated with stricture of the urethra, the incision can be made either by an urethrotome if very near the orifice or if farther down, the incision by the urethrotome is not so sure, because with those cutting machines we are not certain of cutting either the exact spot or the contracted tissue. This last-named tissue in many cases is very difficult to cut through, on account of its yielding elastic nature, and if not entirely cut the operation is a complete failure. Mr. Syme, of Edinburgh, knows this well, and for this reason, in those instances, he directly uses the knife. I do not find it necessary to make such a large opening as he does, and I prefer the subcutaneous incision on my grooved exploring staff; an operation quite harmless, when we use the necessary precautions in the after treatment, as I have previously stated. The consequences most to be feared after the operation are hæmorrhage, urethral fever, and purulent infection. Hæmorrhage after urethral incisions has been much exaggerated by the opponents of this method, and if bleeding should follow in operations made in the spongy and perineal portion of the urethra, I use an instrument to stop it, which I call *sonde-tourniquet*, and by means of pressure for two to three hours the bleeding is arrested. If the subcutaneous incision is made high up in the part just lying before the rectum the danger of bleeding is less, and a large catheter will stop it. The urine should never be allowed to come in contact with the wound; by this precaution pain and urethral fever, infiltration, and probably purulent infection, will be prevented. Purulent infection is to be dreaded in any operation performed on the human frame, and for that reason operations in the urethra are also exposed to it, principally because these parts consist in a great degree of veins; but if the precaution is taken not to let the wound be irritated by the urine, and by not allowing a catheter permanently to remain in the urethra, inflammation and irritation will be avoided; consequently we shall not have either urethral fever or purulent infection. I touch on these points very superficially, because this monograph is only written on gleet, and for that reason this method will be farther treated on, when I shall write my memoir on stricture of the urethra, on which occasion I shall describe the subcutaneous division of the stricture in detail.

CONCLUSIONS.

After all that we have stated in these pages, we form the following conclusions: Gleet has three causes for its persistence—

First. Local weakness in conjunction sometimes with constitutional disturbance. The treatment should be medical, rarely mechanical.

Secondly. Gleet depending on a pathological change in the urethra, as a result of chronic inflammation, as *swelling, contraction*, or *deviation;* and in this case the treatment must be mechanical, or mechanical and medical combined.

Thirdly. There exists a condition of gleet depending on confirmed stricture, either of an elastic yielding nature, or the stricture is tough and unyielding. The spot where the stricture has its seat undergoes an organic structural change, and an elastic tissue of new formation is produced. In those cases the tissue of new formation must be divided; the complete division of this tissue is the only certain method of curing both gleet and stricture.

THE END.

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